CLAIMS

1. A method for determining a regular N-polygonal figure having vertexes of N in number, characterized in that:

the center point (S) of a regular N-polygonal figure to be determined is set as a fixed point;

a point, which is distant by a certain length from the said center point (S) and revolves around the center point (S), is set as a first point (E);

a point, which is distant by a certain length from the first point (E) and revolves around the first point (E), is set as a second point (M); and

assuming that the second point (M) revolves around the first point (E) at an angular velocity $\omega$, that the first point (E) revolves around the center point (S) at an angular velocity $(1-N)\omega$, that the first point (E) is away from the center point (S) by a distance (r), and that the second point (M) is away from the first point (E) by a distance $(N-1)^2r$, the locus of the second point (M) defines a contour of a regular N-polygonal figure to be determined being circumscribed on a circle having a radius $N(N-2)r$.

2. A method for determining a regular N-polygonal figure having vertexes of N in number, characterized in that:

a regular (N-1)-polygonal figure revolves along a circle, which circle is concentric to the center of a regular N-polygonal figure to be determined and has a radius r, and rotates at an angular velocity $\omega$;

a contour of the said regular (N-1)-polygonal figure

is inscribed on a circle having a radius $(N-1)^2r$;

the regular $(N-1)$-polygonal figure revolves at an angular velocity $(1-N)\omega$; and

an area being swept by the said regular $(N-1)$-polygonal figure defines a regular N-polygonal figure to be determined, which figure is circumscribed on a circle having a radius $N(N-2)r$.

3. A method for determining a regular N-polygonal figure having vertexes of N in number, characterized in that:

a regular $(N+1)$-polygonal figure revolves along a circle, which circle is concentric to the center of a regular N-polygonal figure to be determined and has a radius r, and rotates at an angular velocity $\omega$;

a contour of the said regular $(N+1)$-polygonal figure is inscribed on a circle having a radius $(N+1)^2r$;

the regular $(N+1)$-polygonal figure revolves at an angular velocity $(N+1)\omega$; and

an area being swept by the said regular $(N+1)$-polygonal figure defines a regular N-polygonal figure to be determined, which figure is circumscribed on a circle having a radius $N(N+2)r$.

4. A method for determining comprises steps for:

setting a fixed center point;

setting a first point which is away from the center point by a certain length and revolves around the center point;

setting a second point which is away from the first point by a certain length and revolves around the first point;

setting an angular velocity $\omega$ at which the second point revolves around the first point;

setting an angular velocity $(1-N)\omega$ at which the first point revolves around the center point;

setting a distance between the first point and the center point as a distance r;

setting a ratio of the distance between the center point and the first point to the length of a line segment connecting the first and second points being smaller than $(N-1)^2$ ; and

defining a figure to be determined by the locus of the second point, which figure has vertexes of N in number, is circumscribed on a circle having a radius $N(N-2)r$, and is a single closed region formed by curves.

5. A method for determining a figure comprises steps for:

setting a fixed center point;

setting a first point being away from the center point by a certain length and revolving around the center point;

setting a second point being away from the first point by a certain length and revolving around the first point;

setting an angular velocity $\omega$ at which the second point revolves around the first point;

setting an angular velocity $(1-N)\omega$ at which the first point revolves around the center point;

setting a distance between the first point and the center point as a distance r;

setting a ratio of the distance between the center point and the first point to the length of a line segment, which connects the first and second points, being smaller than $(N-1)^2$; and

defining a figure to be determined by the locus of the second point, which figure is made up of a plurality of closed regions formed by curves and is symmetric with respect to the center thereof.


6.   An apparatus for determining a regular N-polygonal figure having vertexes of N in number, characterized in that the said apparatus includes an input means and a control means,

the said input means is constructed to carry out functions for:

setting a center point of a regular N-polygonal figure to be determined as a fixed point;

setting a first point which is away from the center point by a certain length and revolves around the center point;

setting a second point which is away from the first point by a certain length and revolves around the first point;

setting an angular velocity $\omega$ at which the second point revolves around the first point;

setting an angular velocity $(1-N)\omega$ at which the first

point revolves around the center point;

setting a distance r between the first point and the center point; and

setting a distance $(N-1)^2 r$ between the second point and the first point: and that

the said control means is constructed so as to carry out functions for defining a regular N-polygonal figure to be determined by the locus of the second point, which figure is circumscribed on a circle having a radius $N(N-2)r$.

7. An apparatus for determining a regular N-polygonal figure having vertexes of N in number, characterized in that the said apparatus includes an input means and a control means,

the said input means is constructed to carry out functions for:

inputting so as to revolve a regular (N-1)-polygonal figure along a circle, which circle is concentric to the center of a regular N-polygonal figure to be determined and has a radius r;

inputting so as to rotate such the regular (N-1)-polygonal figure at an angular velocity $\omega$;

setting the regular (N-1)-polygonal figure so as to define a contour which is inscribed on a circle having a radius $(N-1)^2 r$; and

setting an angular velocity $(1-N)\omega$ at which the regular (N-1)-polygonal figure revolves: and that

the said control means is constructed to carry out a

function for defining a regular N-polygonal figure to be determined, which is circumscribed on a circle having a radius N(N-2)r, by an area being swept by the regular (N-1)-polygonal figure.

8. An apparatus for determining a regular N-polygonal figure having vertexes of N in number, characterized in that the said apparatus includes an input means and a control means,

the said input means is constructed to carry out functions for:

inputting so as to revolve a regular (N+1)-polygonal figure along a circle, which circle is concentric to the center of a regular N-polygonal figure to be determined and has a radius r;

inputting so as to rotate such the regular (N+1)-polygonal figure at an angular velocity $\omega$;

setting the regular (N+1)-polygonal figure so as to define a contour which is inscribed on a circle having a radius $(N+1)^2r$; and

setting an angular velocity $(N+1)\omega$ at which the regular (N+1)-polygonal figure revolves: and that

the said control means is constructed to carry out a function for defining a regular N-polygonal figure to be determined, which is circumscribed on a circle having a radius N(N+2)r, by an area being swept by the regular (N+1)-polygonal figure.

9. An apparatus for determining a figure, characterized in that the said apparatus includes an input means and a control means, the said input means is constructed to carry out functions for:

setting a center point as a fixed point;

setting a first point which is away from the center point by a certain length and revolves around the center point;

setting a second point which is away from the first point by a certain length and revolves around the first point;

setting an angular velocity $\omega$ at which the second point revolves around the first point;

setting an angular velocity $(1-N)\omega$ at which the first point revolves around the center point;

setting a distance r between the first point and the center point;

setting a ratio of the distance between the center point and the first point to the length of a line segment, which connects the first and second points, being smaller than $(N-1)^2$ : and

the said control means is constructed to carry out a function for defining a figure to be determined by the locus of the second point, which figure has vertexes of N in number, is circumscribed on a circle having a radius $N(N-2)r$, and is a single closed region formed by curves.

10. An apparatus for determining a regular N-polygonal

figure, characterized in that the said apparatus includes an input means and a control means,

the said input means is constructed to carry out functions for:

setting a center point as a fixed point;

setting a first point which is away from the center point by a certain length and revolves around the center point;

setting a second point which is away from the first point by a certain length and revolves around the first point;

setting an angular velocity $\omega$ at which the second point revolve around the first point;

setting an angular velocity $(1-N)\omega$ at which the first point revolves around the center point;

setting a distance r between the first and the center point; and

setting a ratio of the distance between the center point and the first point to the length of a line segment, which connects the first and second points, being smaller than $(N-1)^2$ : and that

the said control means is constructed to carry out a function for defining a figure to be determined by the locus of the second point, which figure is made up of a plurality of closed regions formed by curves and is symmetric with respect to the center thereof.